# Tax policy and national savings in the United States

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# TAX POLICY AND NATIONAL SAVING IN THE UNITED STATES: A SURVEY**

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*ABSTRACT*

*This paper surveys how tax policy affects the level and allocation of national saving in the United States. It argues that the effect of taxes on the overall private saving level is relatively small and uncertain and that raising public saving is the most direct and efficient way to raise national saving. However, the tax system has a powerful impact on the composition of savings and investment. The paper suggests various specific tax measures that would not only raise revenue but also enhance the efficiency of savings and investment.*

## 1. Introduction

THE national saving rate in the United States has declined to low levels during the 1980s. This development is of serious concern for two major reasons. First, the low saving rate will make it difficult to sustain the rise in U.S. living standards in the future, especially when the large baby boom generation starts to retire early in the next century. Second, the declining saving rate is the main factor behind the emergence in recent years of sizable external current account deficits. If the recent improvement in the U.S. external account is to be sustained in the context of noninflationary growth, the national savings rate needs to be raised substantially. Otherwise, the external current account can be brought into better balance only by slowing down domestic capital accumulation, which would endanger long-run growth of output and employment.

This paper surveys how tax policy affects saving and explores which policy instruments are most effective in raising the level and improving the quality of national saving. Section 2 examines the effects of tax policy on private saving. A major theme of this section is that, while the effect of tax policy on the level of private saving is relatively small and uncertain, it nevertheless has a powerful effect on the composition of private saving and investment. In particular, the U.S. income tax system, which discriminates between different types of saving and investment, has led to significant distortions in the allocation of savings among owner-occupied and rental housing, other durable consumer goods, intangible corporate assets, and various types of nonfinancial business assets. By affecting the share of foreign and domestic saving that is invested domestically, taxes have also influenced the external current account balance. High inflation rates at the end of the 1970s exacerbated most of the distortions resulting from differential tax treatments. Whereas the Tax Reform Act of 1986 and lower inflation rates have reduced some of these distortions, the growing integration of world financial markets has tended to raise them.

Section 3 contains some policy conclusions. It argues that raising public saving by reducing the fiscal deficit is the most direct and efficient way to raise national saving in the United States. In this context, tax policy can help to increase public saving by raising government revenues. Moreover, tax policy plays a crucial role in ensuring that higher national saving flows into investments with relatively high social returns. This section singles out tax measures that not only raise government revenue but also generate beneficial incentives, thereby improving the efficiency of domestic investment and saving.

## 2. Tax Treatment of Private Savings

This section explores the role of income taxation in affecting the level and composition of private savings. Subsection 2.a

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examines the current system of income taxation in the United States and shows that it discriminates among various types of savings. Subsection 2.b explores the way in which differential tax treatment results in inefficient resource allocation by distorting the allocation of investment. Finally, subsection 2.c investigates the effects of taxation on the levels of corporate and private saving.

*a. The Current Tax System*

The income tax system in the United States differs from a comprehensive income tax system, in that many forms of savings largely escape income taxation[1] and are treated essentially on a consumption tax basis. This subsection first discusses the main types of savings and capital income that are not fully taxed under the income tax system in the United States. It then mentions two elements in the system that may raise the tax burden on savings above that implied by a comprehensive income tax.

Although the 1986 Tax Reform Act raised the tax rate on realized capital gains to that on ordinary income, capital gains still receive preferential tax treatment for a number of reasons.[2] First, whereas a comprehensive income tax would include all accrued capital gains in the tax base, the United States levies tax only on realized capital gains. Second, capital gains on inherited assets are exempt from income taxation because it defines a new basis for capital gains on such assets as their value at the time of the death of the previous owner. Third, the effective tax rate on capital gains from owner-occupied housing is close to zero; a rollover provision allows the tax on the capital gains from the sale of a principal residence to be deferred, while the tax code grants a one-time exemption of $125,000 in capital gains to taxpayers who are older than 55 years.

Owner-occupied housing not only receives preferential tax treatment of capital gains but also enjoys tax benefits that stem from the income tax exemption of the imputed return on household durables. In contrast to cash income from rental housing, in-kind income from owner-occupied housing goes untaxed. Furthermore, the tax system allows owners to deduct mortgage interest (up to the original cost of the dwelling) and real estate taxes, even though it does not tax imputed income from owner-occupied housing.[3]

Savings in the form of employer-financed health and pension plans, the Individual Retirement Accounts (IRAs) and Keogh plans, cash-value life insurance policies, as well as state and municipal bonds still receive preferential tax treatment, although the recent tax reform tightened some of these tax benefits.[4] In particular, a large fraction of interest income earned through life insurance and employer-financed pension funds, as well as through state and municipal bonds, still escapes income tax.[5]

At the corporate level, the tax law allows corporations to depreciate their assets faster than estimated economic depreciation would seem to suggest, although the recent tax reform made the depreciation schedules for fixed assets somewhat less liberal while at the same time abolishing the investment tax credit. Corporate tax provisions may also benefit investments in a number of intangible assets, such as marketing, advertising, and research and development.[6] Like physical assets, these intangible assets may provide benefits over a number of years. Whereas firms can amortize tangible investments only gradually over time, they can deduct the costs of these intangible investments in the year in which they are made. Thus, income from these intangible assets may be subject to lower effective tax rates than is income from tangible assets. However, it can be argued that most assets used for research and development, advertising, or marketing have short and uncertain economic lives and, therefore, should be permitted immediate expensing. Moreover, expenditures on other intangible assets purchased from others (such as patents, copyrights, franchise) can only be depreciated over the legal life of such assets, while goodwill, for example, cannot be amortized at all for tax purposes insofar as its useful life is unlimited.

Whereas all the aforementioned elements reduce the tax rate on capital income relative to a comprehensive income tax,[7] two major elements in the tax system may raise the tax burden beyond that implied by a comprehensive income tax. The first is the double taxation of corporate equity income, which is taxed once at the corporate level and again at the shareholder level. The second element involves the interaction of inflation with the nominal character of the income tax system. Realized capital gains are taxed on a nominal basis instead of on a real basis.[8] Moreover, the tax system adopts historical cost rather than replacement cost as the basis for depreciation allowances and inventory accounting. If inflation is positive, this procedure overstates real income, thereby increasing the tax burden beyond that imposed by a properly indexed tax system. However, lack of indexation of interest income and expense lowers the tax burden on net borrowers below the rate that would be obtained under an indexed system. This element may reduce the overall tax burden on capital income by allowing borrowers to deduct nominal interest expenses at higher tax rates than those at which lenders are taxed.[9]

*b. The Tax System and the Allocation of Savings*

The differential tax treatment of various forms of savings, which was documented in the previous subsection, typically leads to differential treatment of investment in various assets, implying an inefficient allocation of capital over various activities. Profit-maximizing investors make different investments to the point where they receive the same after-tax rate of return (adjusted for risk factors) on all these investments. If the tax system treats investments differently, the before-tax rates of return on capital, which in the absence of externalities correspond to the social rates of return, are not equalized. In particular, at the margin, the social rates of return on investments that are relatively heavily taxed exceed the returns on more lightly taxed investments. Thus, the allocation of capital is inefficient: total output could be raised by increasing investments in heavily taxed activities at the expense of investments that bear a lighter tax burden.

As well as harming efficiency, the tax-favored status of many forms of savings is also likely to reduce the progressivity of the income tax system because the tax advantages typically are more valuable to individuals facing the highest marginal tax rates. Moreover, high-income individuals tend to be better informed about opportunities for tax arbitrage that allow them to avoid taxes by simply restructuring their assets and liabilities. In fact, the share of tax-favored assets in the portfolios of higher-income groups with higher marginal income tax rates tends to exceed the share of these assets in the portfolios of lower-income groups.[10]

This combination of the differential tax treatment of capital income and a progressive structure of personal income tax rates may result in substantial revenue losses for the Government owing to tax arbitrage. In a typical case, an individual or a firm facing a high marginal tax rate accumulates a tax loss by borrowing to buy a lightly taxed asset. An individual facing a low marginal tax rate or a tax-exempt institution receives the interest income. On a net basis, the Government loses revenue from these transactions.[11]

The rest of this subsection elaborates on two major tax distortions, which divert resources into owner-occupied housing and debt-financed assets, respectively.[12] It describes how high inflation rates in the late 1970s interacted with the nominal tax system to exacerbate these distortions. Finally, it analyzes the effect of both the Tax Reform Act of 1986 and the growing internationalization of capital markets on these distortions.

***(1) Owner-Occupied Housing***

The U.S. tax system is biased in favor of housing investment relative to corporate investment in plant and equipment. In particular, the favorable tax treatment of home ownership has led to excessive investment in housing as opposed to other

capital projects. It has also tended to widen the imbalance between national investment and national saving by encouraging borrowing for residential investment. Moreover, it has benefited middle- and higher-income groups at the expense of lower-income groups. In view of their higher marginal income tax rates, more affluent groups take greater advantage of the tax deductibility of mortgage interest and the tax exemption of imputed rent.[13]

The asymmetry in the tax treatment of owner-occupied housing and business investment rises with inflation as a result of three main considerations. First, in contrast to the services from owner-occupied housing, the return on corporate capital is taxed. Inflation increases the income tax burden on corporate capital because it reduces the real value of depreciation allowances for corporate tax purposes. Second, unlike most owners of homes, owners of corporate capital pay tax on realized capital gains. Inflation raises the real tax burden on capital gains because these gains are taxed on a nominal, as opposed to a real, basis. Third, inflation increases the tax advantages of debt financing over equity financing (see (2) below). This tax advantage tends to benefit home owners, who may find it easier to borrow against their homes, which are relatively easy to sell, than do corporations against their assets, which tend to be less readily marketable.

Several studies argue that the interaction of the tax system and the rising inflation rate in the late 1970s stimulated investment in owner-occupied housing relative to investment in corporate assets by reducing the user cost of owner-occupied housing relative to that of other assets.[14] Although the cash flow constraint of rising monthly mortgage payments during the inflationary period limited the ability of households to fully exploit the tax advantages, the empirical evidence suggests that, on balance, the user-cost effect dominated. Hendershott (1980) concludes, for example, that the interaction of inflation and the tax system raised the real stock of housing by 15 percent between 1964 and 1980.[15]

The 1986 tax reform is likely to reduce somewhat the implicit subsidy to residential investment by lowering the marginal personal income tax rates at which individuals are taxed on other capital income and at which they can deduct mortgage interest. Carroll and Summers (1987) and Hendershott (1987), however, observe that the recent tax reform has raised the average effective tax rate on marginal fixed investment in the corporate sector by eliminating the Investment Tax Credit (ITC) and by scaling back depreciation benefits. They argue, therefore, that, while it has leveled the playing field within the corporate sector, the reform may have exacerbated the bias in the allocation of the national capital stock toward owner-occupied housing and away from fixed corporate investment.

However, tax reform may have improved the international allocation of capital. In open international capital markets, most resources released by the corporate sector in the United States as a result of the tax change are likely to flow abroad rather than into the domestic housing sector. Moreover, the lower subsidy to residential investment implicit in lower personal tax rates may cause more savings to be invested abroad.[16] Capital invested abroad may well earn a higher before-tax rate of return than domestic capital. From a world efficiency point of view, the incentives for domestic investment that were introduced at the beginning of the 1980s most likely contributed to excessive investment in the United States, which provided more generous investment incentives than did most other industrial countries. The partial reversal of these incentives, together with the lower incentives to invest in housing in the United States, may therefore contribute to a more efficient allocation of the world capital stock.[17]

Although the recent decline in the inflation rate and the reduction in personal income tax rates have reduced the distortion in favor of owner-occupied housing, tax policy still favors investment in household durables and in housing in

particular. This distortion in favor of investment in consumer durables and housing becomes more serious in more integrated international financial markets: if supplies of foreign funds become more elastic, implicit subsidies for housing investment cause larger amounts of domestic investment to flow into owner-occupied housing.[18]

### *(2) Debt Versus Equity Financing*

The tax system favors debt over equity financing. On the borrower's side, it allows borrowers to deduct interest expenses. On the lender's side, in contrast, it appears to discriminate against debt instruments because it taxes interest income at a higher effective rate than that on accrued capital gains. On a net basis, however, the tax system favors debt; the average tax rate at which interest can be deducted exceeds the average rate at which interest is taxed at the personal level because a large part of interest income is earned through tax-exempt institutions and tax-exempt instruments.[19] Moreover, a large part of interest income appears to escape income tax owing to tax evasion, especially on an international level.

The differential tax treatment in favor of debt stimulates debt-financed investments. Therefore, the tax system may divert too many resources into readily marketable assets, against which corporations and households generally find it easier to borrow than against more-difficult-to-sell assets. According to Summers (1987) and Gordon, Hines, and Summers (1987), this explains why commercial structures have become a major tax shelter. The tax advantages of debt relative to equity also favor low-risk over high-risk investments and large over small companies because high-risk and small firms tend to be mainly financed through equity.

Inflation worsens not only tax distortions favoring owner-occupied housing but also the distortions favoring debt financing—for two reasons. First, inflation raises the tax subsidy to debt because it increases the value of interest deductibility in that the tax system allows borrowers to deduct their nominal, as opposed to their real, interest expenses. The taxation of nominal interest income only partly offsets this effect because the average rate at which interest income is taxed is typically below the average rate at which interest can be deducted.[20] Second, inflation increases the tax burden on equity income by taxing capital gains on a nominal rather than a real basis. During the inflationary period of the late 1970s, the adverse effect of inflation on equity financing is likely to have reduced the share of equity in corporate balance sheets. Whereas declining inflation during the 1980s mitigated the tax benefits associated with debt financing, the repeal in 1984 of the withholding tax on interest income to foreigners raised these benefits somewhat.

The Tax Reform Act of 1986 decreased the incentives for debt financing by reducing the statutory rate of corporate income tax at which corporations could deduct their interest expenses. Some have argued, however, that a higher relative tax burden on equity at the personal level, owing to a rising capital gains tax rate and a falling personal income tax rate, has actually increased the incentive for debt financing in the United States. In view of the low effective personal tax rate on interest income before the tax reform, however, the lighter tax burden on interest income is unlikely to be large enough to offset the reduction in borrowing incentives. Moreover, the changed incentives for U.S. savers may affect borrowing incentives in the United States only marginally because more integrated international financial markets may largely separate domestic lending and financing decisions; domestic savings have only a limited impact on the cost of financing, which is largely determined by underlying demand and supply conditions worldwide rather than by conditions in the U.S. financial market alone.

The tax system continues to favor debt financing despite the recent reduction in inflation and marginal income tax rates. Just as in the case of owner-occupied housing, the efficiency losses resulting

from this distortion[21] are likely to grow as international capital markets become more integrated.

*c. The Tax System and the Level of Saving*

This subsection examines how the tax system affects the level of private saving. It first analyzes the effect of personal taxation on household saving. It then investigates how taxes at the corporate and personal levels influence corporate and private saving.

***(1) Personal Saving***

Whether or not personal income taxation in the United States reduces the level of private saving is a controversial issue. It is closely related to the question of whether replacing the current income tax system by a consumption tax, which exempts all capital income, would raise saving. If savers bear part of the income tax burden on interest income, they receive a higher after-tax rate of return from a consumption tax. The empirical and theoretical literature on the savings effect of personal taxation has therefore focused on the elasticity of saving with respect to the rate of return.

The theoretical literature demonstrates that the interest elasticity of saving can take on any sign. It is well known that the sign of the uncompensated interest elasticity is ambiguous because of offsetting income and substitution effects. However, even the sign of the compensated elasticity, which is more relevant for balanced budget exercises that leave the aggregate income of the private sector constant, cannot be determined *a priori* for two main reasons. First, Feldstein (1978) shows that, although a compensated increase in interest rates unambiguously raises future consumption, such an increase may reduce saving because a higher after-tax interest rate implies that one does not have to save as much as before to ensure some future consumption level.[22] Second, using pure life-cycle models, Summers (1981), Sandmo (1985), and Auerbach and Kotlikoff (1987) demonstrate that the sign of the elasticity depends on when the Government compensates the various generations and how the compensation influences the intergenerational distribution of resources.[23]

Auerbach and Kotlikoff's (1987) simulation model analysis of alternative ways of introducing consumption taxation illustrates the crucial role played by intergenerational distribution effects. Replacing income taxation by consumption taxation shifts the tax burden to the elderly. Switching the tax base from income to wages, in contrast, benefits the elderly at the expense of the younger generations. Using a life-cycle model, Auerbach and Kotlikoff demonstrate that, although both consumption and wage taxes remove the taxation of capital income, consumption taxes are much more powerful in raising saving. Although replacing income by wage taxes will raise the after-tax interest rate, it may even reduce saving because it shifts the tax burden away from the elderly, who are generally low savers.

Empirical studies on the interest elasticity of saving generally suggest that interest rates have only a small direct impact on saving in the United States.[24] Boskin (1978) finds a significant positive effect but others have found it difficult to reproduce his results. However, because all empirical studies in this area suffer from a number of serious methodological problems,[25] it is not clear whether the empirical findings reflect the lack of significance of interest rate effects or the bluntness of the empirical techniques.[26]

The actual experience in the early 1980s suggests that the interest elasticity of saving is quite small. Bernheim and Shoven (1985) show, for example, that rising real interest rates led to a sharp decline in contributions to defined benefit pension plans because of the reduced need to save for a target level of retirement consumption. Tanzi and Sheshinski (1984) demonstrate that the increase in real interest rates during this period changed the intergenerational distribution in favor of the elderly, who own a disproportionate share of financial wealth because of a natural life-cycle pattern. This shift in the

intergenerational distribution may have reduced saving.[27]

The empirical and theoretical literature does not resolve whether replacing the current income tax by a pure consumption tax would significantly increase private saving.[28] The literature suggests, however, that tax policy affects the level of private saving primarily through income and wealth effects on the intergenerational distribution of resources rather than through intertemporal substitution effects on the timing of consumption.

The 1986 Tax Reform Act contains provisions stimulating personal saving as well as elements reducing personal saving incentives. Tax reform may have discouraged saving by more sharply limiting the use of IRAs and other tax-deferred savings vehicles. Whether these incentives in fact succeeded in raising the overall level of financial saving rather than just causing savers to rearrange their portfolios away from taxable assets remains a matter of controversy. Shoven (1984) argues that tax-deferred savings accounts did not substantially affect saving because the tight limits on these accounts caused most savers to do their marginal saving in fully taxed assets. Empirical studies by Venti and Weiss (1987) and Feenberg and Skinner (1989), however, suggest that most IRA contributions represented new saving.[29]

The Tax Reform Act contains several provisions favorable to saving. Lower marginal tax rates on personal income may increase saving slightly by reducing the tax rate on interest income, although the increase in the tax rate on capital gains may partly offset this effect. More important, lower rates decrease the incentive to borrow at both the corporate and personal levels. The limitations on the deductibility of consumer interest payments may also reduce borrowing incentives somewhat. However, home owners are likely to be largely unaffected; they can still borrow against their homes because the tax reform retains the deductibility of mortgage interest. In fact, the recent wave of home equity loans, which are secured by mortgage and are actually overdrafts, suggests that many home owners engage in this type of tax arbitrage.

### *(2) Corporate Saving*

Taxation affects corporate saving through two main channels. First, unless it is fully shifted, the corporate tax reduces after-tax profits. Corporate saving is, in turn, reduced unless, as seems unlikely, reduced dividends fully reflect lower net profits. The second channel is the incentive to pay out dividends. The U.S. tax system favors retaining profits over paying dividends because the personal income tax rate on dividends exceeds the effective tax rate on capital gains.[30]

The 1986 Tax Reform Act reduced corporate saving through both of these channels. First, it increased total corporate tax payments; several provisions that raised corporate tax payments, such as the elimination of the ITC and the tightening of minimum tax and depreciation allowances, more than offset the revenue effect of the reduction in the statutory corporate income tax rate from 46 percent to 34 percent. Second, the tax reform encouraged firms to pay more dividends because it reduced marginal income tax rates on dividends while at the same time raising the tax burden on capital gains. Poterba (1987) estimates that tax reform may reduce corporate saving by about 1 percent of gross national product (GNP) in 1989 (Table 1).

The relationship between personal and corporate saving determines the effect of corporate saving on private saving. Some have argued that households pierce through the "corporate veil" so that personal saving adjusts to offset movements in corporate saving. However, a variety of imperfections and constraints may cause personal saving to offset corporate saving only partially, especially in the short run.[31] Several empirical studies suggest that shareholders save more from accrued capital gains than from dividend income. Whereas David and Scadding (1974) and Feldstein (1973) could not reject the hypothesis that households offset changes in corporate saving, more recent studies, including those by Bhatia (1979), Sturm

Table 1. Effects of 1986 Tax Reform Act on Corporate Savings, 1987-89 1/

(In billions of 1986 dollars)

| Year | Predicted Change in Corporate Taxes | Effect on Dividends | | | Combined Effect on Corporate Savings |
|---|---|---|---|---|---|
| | | Corporate tax | Payout incentives | Total | |
| 1987 | 31.7 | -1.9 | 3.1 | 1.1 | -32.8 |
| 1988 | 23.6 | -4.8 | 10.6 | 5.8 | -29.4 |
| 1989 | 24.6 | -8.4 | 20.6 | 12.2 | -36.8 |

Source: James M. Poterba, "Tax Policy and Corporate Saving," Brookings Papers on Economic Activity: 2 (1987), The Brookings Institution (Washington), pp. 455-503.

1/ Relative to situation without tax reform.

(1983), Hendershott and Peek (1987), and Poterba (1987), found a less than complete offset. Poterba (1987), for example, estimates that a $1 fall in corporate saving raises personal saving only by between $0.50 and $0.75. Accordingly, households appear to offset some of the movements in corporate saving—but less than fully. In view of these results, corporate saving may be the most important channel through which the 1986 Tax Reform Act will affect private saving in the short run. To illustrate, Poterba (1987) suggests that lower corporate saving may reduce private saving by $10–$20 billion (0.3–0.6 percent of GNP) by 1989.

The welfare implications of lower corporate saving are ambiguous because they depend on various imperfections that affect the relationship between the market rate of return and the rate of return on investment projects financed by retained earnings. On the one hand, the recent increase in corporate takeovers has led to some concern that problems of corporate control may cause managers with ample supply of retained earnings to invest in projects yielding below market returns.[32] On the other hand, the cost of external funds may exceed that of internal finance because of imperfections in capital markets.[33] If this interpretation applies to most firms, a higher corporate tax burden compounds a pre-existing distortion by reducing investment further because it increases the need to raise more expensive external funds. On these grounds, Boskin (1987) argues that corporate savings typically flow into high productivity investment.

## 3. Policy Conclusions

This section addresses normative issues facing U.S. economic policy on the basis of the positive analysis contained in the previous section. In light of the size of the external imbalance and the objectives of strong capital formation and economic growth, fiscal policy in the United States should aim at raising the level of national saving while shifting the allocation of national savings away from the accumulation of certain real assets with

low social rates of return.

Subsection 3.a discusses the role of tax policy in influencing the level and composition of national saving. It maintains that national saving should be raised through a lower budget deficit, which will increase public saving. Furthermore, tax policy should aim at removing distortions in the allocation of savings and investment. Subsection 3.b outlines several specific tax measures aimed at improving the efficiency of savings and investment, most of which would also increase public saving by raising net government revenue.

### *a. How to Raise National Saving*

According to the theory of economic policy, each policy objective should be assigned to a policy instrument that substantially contributes to attaining that objective without imposing significant costs. Thus, the objective of raising national saving should be assigned to fiscal policy as a whole, geared toward reducing the (current account) budget deficit,[34] because an increase in public saving can most reliably and directly enhance national saving. Although some studies, including Barro (1974), have argued that private saving behavior offsets the effect of movements in public saving on national saving, most empirical studies find that the offset is incomplete and that public saving can systematically and fairly predictably influence the level of national saving.[35]

The costs associated with raising public saving appear to be relatively minor,[36] with one important exception: the Government may find it politically difficult to run budget surpluses aimed at raising national savings because these surpluses may generate pressure for higher government spending or lower taxes. How the Government will use the growing surplus in the social security trust fund is an important test case in this regard. However, alternative policy instruments aimed at raising national saving are likely to impose even higher costs. For example, if quantitative constraints were introduced on borrowing or if insurance schemes were abolished in an effort to reverse some of the forces that have contributed to a declining private saving rate over the past decades,[37] substantial efficiency losses would result. Moreover, some of the causes behind the declining private savings rate, such as the changing age structure of population, are difficult to affect by policy.

Reducing the fiscal deficit may have other benefits apart from raising public savings. First, credible deficit reduction, especially if it is accompanied by a fundamental decision about the share of government spending in national income, would contribute to a more stable and more certain tax environment and reduce the likelihood of higher future taxes on savings and investment. Second, it would lower the risk that inadequate indexing provisions in the income tax system would lead to more discriminatory tax treatment of some types of capital, including corporate capital, because a lower deficit would reduce the likelihood that excess domestic demand would fuel inflation.

Section 2 indicated that, in contrast to the fiscal deficit, the tax treatment of private savings plays an indirect[38] and uncertain role in affecting the level of national savings. However, tax policy should be able to complement higher public saving because it has a powerful effect on the composition of savings and investment; it should ensure that savings, including the additional savings released by smaller fiscal deficits, flow into investments that yield relatively high before-tax rates of return and therefore satisfy efficiency criteria.

Tax policy affects the external accounts through the national savings-investment balance because it influences the incentives for investing foreign and domestic savings in domestic assets. In fact, tax policy has become more powerful in influencing where domestic and foreign savings are invested because the growing integration of world financial markets is increasingly breaking the link between domestic savings and domestic investment. Therefore, it becomes more important to distinguish between, on the one

hand, tax incentives for domestic financial savings, which may be largely invested abroad, and, on the other hand, tax incentives for investment in domestic assets.[39]

Two considerations suggest that, instead of providing incentives to investment to offset disincentives to saving, policymakers ought to carefully coordinate investment and saving incentives. First, a country that subsidizes many types of investment but penalizes financial saving—for example, the United States[40]—tends to reduce national welfare. In such a country, marginal investments are likely to earn a national return that is below the national financing cost, while the return on marginal national savings most likely exceeds the cost in terms of forgone consumption. Second, sizable external imbalances accompanied by large shifts in real exchange rates may become entrenched if policymakers fail to balance investment and saving incentives.

*b. Specific Tax Measures*

This subsection outlines some specific tax measures that are aimed at improving the efficiency of national savings by allocating a greater proportion of overall private saving to financial saving. If the efficiency of savings is to be improved, the differential tax treatment of various types of savings must be mitigated. This can be accomplished by moving either to a comprehensive income tax or to a pure consumption tax. Whereas a comprehensive income tax eliminates all tax preferences, a consumption tax extends them to all forms of capital income. Gordon and Slemrod (1988) suggest that moving toward more uniform tax rates on real capital income would enhance efficiency and raise government revenue, irrespective of whether the uniform tax rate is zero, as under a consumption tax, or equal to the individual's tax rate on labor income, as under a comprehensive income tax.

Although several authors[41] have favored the complete elimination of the income tax by moving toward a direct consumption tax (or expenditure tax),[42] a number of considerations favor broadening the base of the existing income tax while at the same time raising the level of indirect taxation on consumption. First, a pure consumption tax levied at the personal and corporate levels would be difficult to implement and would give rise to a number of serious problems during the transition.[43] Second, because it exempts saving, a consumption tax would require a higher tax rate on labor income than would a comprehensive income tax. A higher tax rate on labor income implies that a consumption tax distorts labor supply decisions more than does an income tax. Sandmo (1985) demonstrates that if, by adjusting public savings, the Government could attain the golden rule growth path, which maximizes steady-state consumption, an optimal tax system would contain both income taxes and consumption taxes. The optimal rates of consumption and income tax depend on the relative magnitudes of the compensated labor supply elasticity and the intertemporal substitution elasticity of consumption.

The U.S. tax system currently relies heavily on income taxation; the share of consumption taxes in total tax revenue is quite low by international standards. The introduction of a broad-based value-added tax (VAT), which many other industrial countries have implemented, would help to increase the role of indirect taxation which may alleviate problems of tax enforcement.[44] Moreover, such a tax, which also covers durable goods, is likely to raise financial savings by reducing the tax incentives for saving in the form of consumer durables. A VAT may also be a more efficient way to finance the fiscal deficit (excluding social security) than using the growing cash surpluses in the social security system, which would amount to increasing the role of payroll taxation in financing public expenditures.[45]

While the income tax can be maintained as a component of the tax system, the structure of the income tax should be improved in three ways: the income tax base should be indexed; this base should be broadened; and the corporate and personal income structures should be integrated. Indexing the tax system reduces the distortive effects of inflation on sav-

ing and investment decisions, and is likely to improve the external current account balance because the interaction of a nominal income tax system and inflation favors borrowing over lending. The main arguments against indexation involve administrative complications as well as the fear that it may harm the credibility of anti-inflation policies and encourage non-tax indexation of wages and other income. However, although lower inflation and marginal tax rates have reduced the vulnerability of the income tax with respect to inflation, both the growing internationalization of capital markets[46] and the higher tax rate on capital gains have raised the efficiency losses due to distortions induced by a nominal income tax system. Moreover, even in the current environment with low inflation rates, indexation of income taxes improves the climate for long-term decision making, and for saving and investment decisions in particular, because it assures the private sector that the authorities will not allow the interaction of the tax system and inflation to reduce its after-tax real incomes. In indexing the tax system, the authorities should base depreciation allowances on replacement costs. In addition, they should tax and allow the tax deductibility of only the real component of interest receipts and payments, respectively.[47]

Broadening the income tax base by removing tax benefits for some types of savings would improve the efficiency of savings. Moreover, it would eliminate many opportunities for avoiding income taxes through tax arbitrage, thereby improving equity and raising revenue. Including more savings in the tax base would seem to worsen intertemporal distortions resulting from the tax system. However, together with higher consumption taxation, broadening and indexing the income tax base would contribute to lower marginal income tax rates on real incomes. Distortions in labor supply, saving, and investment decisions would thus be reduced.

Imputed rent on owner-occupied housing could be an important ingredient of a broader income tax base.[48] Including imputed rents in the income tax base would most likely raise financial saving, increase public saving, and improve the external accounts. Moreover, it would prevent more integrated world financial markets from worsening the housing distortion. Although some of these objectives would also be accomplished if the tax deductibility of mortgage interest were phased out, the tax benefits of investing in owner-occupied housing would still be maintained if imputed rents were to remain untaxed. In particular, affluent savers with substantial amounts of financial wealth would be able to engage in tax arbitrage by disinvesting in taxable assets to finance the purchase of homes.[49]

Explicitly including imputed income from consumer durables in the tax base is difficult. However, tax policy can use indirect taxes on consumer durables to mitigate the distortion in favor of consumer durables while at the same time contributing to the progressivity of the tax system. In particular, an implicit tax can be levied on discounted capital income through an indirect tax on the durable at the time of the purchase. In fact, tax policy is quite a powerful tool in this respect: several empirical studies indicate that demand for durables is quite elastic with respect to relative prices.[50] Raising taxes on energy may also contribute to shifting the composition of savings away from consumer durables—which use much energy—toward financial assets. In fact, several studies[51] suggest that higher energy prices raise financial saving. Raising excises on durables and energy may also improve the efficiency of the international resource allocation in view of the low level of these taxes in the United States relative to that in most other industrial countries. The relatively low revenue share of these taxes in the United States may explain why portfolios in the United States contain a higher share of consumer durables—which typically use much energy—and a lower share of financial assets than portfolios in other industrial countries.[52]

With regard to the corporate income tax, positive externalities may justify the subsidy to investments in research and development implicit in the immediate ex-

pensing allowed for many of these investments. However, other intangible investments, and advertising expenditures in particular, fail to generate positive externalities. In fact, advertising may generate negative externalities.[53] Thus, depreciation rules for these intangible investments could be tightened.

Integration of the personal and corporate income tax systems, which would remove the double taxation of dividends,[54] may reduce the tax distortion in favor of debt-financed assets.[55] In particular, it may prevent the higher rate of capital gains tax, which was introduced in the 1986 tax reform, from worsening the distortion against equity financing.[56]

In conclusion, tax policy can make an important contribution toward enhancing the quality of savings and investment, raising financial saving, and thus improving the external accounts. Moreover, several tax measures would not only benefit incentives but also raise net public revenue. Consequently, they would help to raise public and national saving. Thus, tax policy can improve the external accounts not only by raising private financial saving but also by increasing public (and national) saving.

## ENDNOTES

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[1]In addition to a large proportion of capital income, part of labor income—for example, fringe benefits—can be sheltered from income tax. For a fuller discussion of tax expenditures, see Ebrill (1988).

[2]Inflation may offset some of these considerations because capital gains are taxed on a nominal rather than a real basis. See below.

[3]Tax bills enacted in 1986 and 1987 tightened the limits on tax-deductible mortgage loans somewhat.

[4]Tax systems in many other industrial countries provide similar tax incentives to saving and pension saving in particular. In fact, several studies have argued that saving incentives provided by other countries tend to be more generous than those in the United States. For Japan, for example, Makin and Shoven (1987) show that until recently about 70 percent of capital income benefited from tax-free accounts similar to the Individual Retirement Accounts in the United States. Carroll and Summers (1987) maintain that, although the incentives to save in sheltered as opposed to unsheltered forms have been powerful in both the United States and Canada, the opportunities for sheltering savings in the United States have been more limited than those in Canada, especially after 1974 when Canada introduced more generous incentives for saving for house purchases.

[5]Gordon and Slemrod (1988) estimate that interest income amounting to $105 billion was received by a variety of nontaxpaying institutions and individuals in 1983.

[6]The annual flow of intangible investments exceeded $200 billion in recent years. Thus, these investments were larger than corporate investments in structures. Fullerton and Lyon (1988) show that in 1983 advertising capital and research and development capital accounted for 4 percent and 7 percent, respectively, of the total capital stock in the United States.

[7]Opportunities for tax avoidance through tax arbitrage offered by tax systems in different countries may reduce the tax burden on capital income as well. The repeal of the withholding tax on interest income to foreigners, for example, is likely to have reduced the tax paid by foreigners on lending to American borrowers.

[8]For an analysis of the implications of this aspect of capital gains taxation, see, for example, Feldstein and Slemrod (1979). This effect may be offset by other considerations, for example, the taxation of realized rather than actual capital gains. See above.

[9]Aaron (1976) and Fullerton (1987) survey the interaction between inflation and a nominal income tax system.

[10]Empirical studies, including that of Feldstein (1976), suggest that the effects of taxes on portfolio composition are quite strong. For example, higher-income groups hold more of their wealth in the form of equity (especially in stocks and owner-occupied housing).

[11]See, for example, Steuerle (1985), and Gordon and Slemrod (1988).

[12]Other tax distortions resulting from discriminatory tax treatment described above may cause excessive investment in consumer durables and some intangible business assets.

[13]See, for example, Rosen (1985).

[14]See, for example, Hendershott and Hu (1981), Feldstein (1980), Ebrill and Possen (1982), and Carroll and Summers (1987). Tanzi (1982) and Montgomery (1986) argue that increasing inflation in the late 1970s induced a shift not only to owner-occupied housing but also to other consumer durables.

[15]This study may have overstated the efficiency costs somewhat because it assumed that supply was infinitely elastic with respect to increased prices. Carroll and Summers (1987) maintain that rigid supplies, while reducing the resources diverted into housing, raised household wealth. This, in turn reduced aggregate saving in the United States.

[16]However, the 1986 Tax Reform Act tightened the use of foreign tax credits. This may make foreign corporate investment somewhat less attractive. Grubert and Mutti (1987) examine the effects of the 1986 tax reform on trade and capital flows.

[17]See, for example, Kopits (1981) and Bovenberg et al. (1988).

[18]See, for example, Tanzi (1987) and Tanzi and Bovenberg (1988).

[19]Gordon and Slemrod (1988) show that the Government loses more from the deductibility of interest expenses than it gains from the taxation of interest income.

[20]In open economies in which foreign savers lend marginal funds, the rate at which the inflation component in interest income is taxed is likely to be even smaller. See Hansson and Stuart (1986).

[21]These distortions may manifest themselves in excessive probability of bankruptcy. See Gordon and Malkiel (1981) and Fullerton and Gordon (1983).

[22]Sandmo (1985) demonstrates that this assumes that compensation occurs in the current period rather than in future periods.

[23]Allowing for elastic labor supply, Sandmo (1985) shows that the sign of the elasticity also depends on cross-substitution effects between consumption and leisure.

[24]See, for example, Bosworth (1981), Montgomery (1986), Hendershott and Peek (1987), and Baum (1988). Hall (1988) provides empirical evidence that the intertemporal elasticity of substitution in consumption, which is an important determinant of the response of saving to the interest rate, is low.

[25]For example, these studies usually represent the rates of return on various assets by a single average rate of return on aggregate saving. This ignores the impact of differential rates of return on the composition of household portfolios. Bosworth (1981), Sturm (1983), Summers (1984), and Sandmo (1985) survey some of the other methodological difficulties facing empirical studies in this area.

[26]Moreover, most studies account for only the direct effect of interest rates. If one accounts for indirect effects of interest changes and, in particular, for the effect on the value of tangible wealth, interest rates may well have a powerful effect on savings. See, for example, Hendershott and Peek (1987).

[27]This is more likely to happen if the elderly save for a positive target level of bequests. See Evans (1983).

[28]Instead of raising the level of savings, a pure consumption tax may cause savers to change the composition of their portfolios toward those assets that are heavily taxed under the income tax system.

[29]Carroll and Summers (1987) reach similar conclusions based on more qualitative evidence.

[30]Retained profits can be expected to raise the market value of a firm and, therefore, accrue to the shareholder in the form of capital gains. As noted above, the effective tax rate on accrued capital gains is much lower than the statutory rate of capital gains tax.

[31]See, for example, Auerbach (1985) and Poterba (1987).

[32]For this line of argument, which stresses less dynamic management and excessive cash buildup, see Jensen (1986) and Makin and Shoven (1987).

[33]These imperfections may be due to informational asymmetries owing to imperfect information as discussed in Stiglitz and Weiss (1981).

[34]This includes not only explicit budget deficit policies but also implicit deficit policies. For a description of implicit deficit policies, which affect the intergenerational distribution of income, see Auerbach and Kotlikoff (1987).

[35]See, for example, Bernheim (1987) and Ebrill and Evans (1988).

[36]The next subsection shows that several tax measures would raise revenue while at the same time enhancing efficiency and equity.

[37]Bovenberg (1988) surveys the major forces behind the decline of the private saving rate.

[38]Tax policy may affect private savings to the extent that it redistributes the tax burden across generations. It may also influence private savings by affecting wealth. See also Seidman and Maurer (1982).

[39]For an analysis along these lines, see Bovenberg et al. (1988).

[40]The United States subsidizes debt-financed investments in owner-occupied housing and many intangible investments and, at the same time, taxes financial savings.

[41]See, for example, Bradford (1981), Shoven (1984), Hall and Rabushka (1983), and Boskin (1986).

[42]Pechman (1980) and Bosworth (1981) provide a survey of both the arguments against and the arguments in favor of an expenditure tax, which is a direct consumption tax that can be tailored to the economic circumstances of the taxpayer. An expenditure tax, therefore, can be more progressive than a broad-based indirect consumption tax when designed appropriately.

[43]See Andersson (1988). A Swedish governmental committee rejected an expenditure tax on these grounds.

[44]Kay and King (1986) argue two broadly based taxes may be preferable over one broadly based tax because problems of tax enforcement increase more than proportionately with the rates of any particular tax.

[45]For a fuller discussion of the relationship between tax policy and the growing surpluses in the social security trust fund, see Bovenberg (1988).

[46]The growing integration of world financial markets has raised the elasticity with which foreign funds are supplied to the domestic economy. This development has raised the efficiency costs imposed by the implicit subsidy to debt financing owing to nominal interest deductibility. See Tanzi and Bovenberg (1988).

[47]Using data for 1983, Gordon and Slemrod (1988) find that taxing real rather than nominal interest would raise government revenue because the average tax rate on interest deductions exceeded the average tax rate on interest income. For a comprehensive treatment of tax indexation, see Aaron (1976).

[48]Italy, Sweden, the Netherlands, Belgium, Denmark, Spain, and Portugal tax imputed rents in some form.

[49]See Gordon and Slemrod (1988).

[50]See, for example, Lemmon (1985).

[51]See, for example, Blinder and Deaton (1985).

[52]See Tanzi and Bovenberg (1988).

[53]See Fullerton and Lyon (1988).

[54]In contrast to the United States, most industrial countries, including the other G-7 countries, provide some relief for the double taxation of dividends.

[55]This assumes the traditional view of dividend behavior under which firms issue new shares to finance marginal investments. According to the new view of dividend taxation, however, marginal equity financing takes the form of retained earnings. In that case, the removal of the double taxation of dividends would stimulate neither equity financing nor investment but

would provide a windfall to current shareholders (see Bradford (1981) and Fullerton and MacKie (1988). Empirical research has not yet resolved the debate between the two views. To illustrate, Poterba and Summers (1985) find support for the traditional view while Auerbach (1984) provides empirical evidence against the old view.

[56]This measure may reduce corporate savings by raising the incentives to pay out dividends. The welfare implications of lower corporate savings, however, are ambiguous. See subsection 2.c above.

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